

Casing of a «Russian» cigarette (papirosy)

Field of the Invention

The invention relates to a casing intended for independent making of a
5 «Russian» cigarette (papirosy) or the like smoking combination by a smoker or for
bulk production.

Background of the Invention

It is generally known that while smoking the consumer inhales the smoke of
10 the smoking material. Smoke is a gas-dispersed system, aerosol, formed by the
gaseous medium and particulate matters and liquid particles, suspended in it, which
are the result of incomplete burning of said smoking material.

The smoking material smoulders at constant pressure. During inhalation, the
smoker creates a low-pressure zone at the place of smoke extraction in his or her
15 mouth. As a result of the pressure differential, the flow of smoke exhibits laminar
flow characteristics directed to the place of its extraction by the consumer.

The combustion products or fumes of the materials being smoked contain
significant amounts of chemical elements and their compounds which are harmful to
the human body.

20 A number of different filters aimed at the reduction of the chemical
concentration in the smoke are known. For this purpose, porous material having high
sorption properties expressed in high sorption activity and high sorption capacity are
used in the filters. These filters are able to sorb a significant part of the above harmful
components of the smoke (envisaged by GB2347607).

25 High sorption properties of the tobacco products and accessories are reached
by the usage of the reagents (envisaged by EP1128740) and the different devices
(envisaged by WO0209541), which have abilities to neutralize some harmful
components of the fume.

30 However, a considerable number of consumers smoke wishing to obtain
smoke with its original taste and flavour, consequently with regular composition.

Among them there is an individual category of consumers giving preference to
the independent choice of filling materials comprising tobacco blends and very often
by cocktails of different tobacco blends.

A second category of consumers is forced against their normal inclinations, to resort to inhalations of the combustion products of different smoking blends for the purposes of medication and disease-prevention. It is necessary to maintain the smoke composition for these consumers.

5 There are filters intended for maintenance of the original taste and flavour of the tobacco by means of ensuring the specified ratio of the filtered and unfiltered smoke (envisaged by EP1093728).

It is apparent that any filter essentially changes the composition and subsequently the taste and flavour of the smoke.

10 In spite of the fact that the sorption capability is a property of any body, it is possible to achieve the maximum preservation of the composition, taste and flavour of the smoke by omitting such filters, reagents and devices.

There are many ways and products which make it possible for the smokers to inhale the unfiltered smoke. However, each of them has certain imperfections
15 along with the advantages.

Cigars and cigarillos are rather expensive and contain an amount of the smoking material significantly exceeding the proportions of the standard cigarettes and may lead to the increase of their consumption.

When smoking filterless cigarettes, the smoker extracts the smoke
20 immediately from the smoking part which is why particles of the combustion products may get into the smoker's mouth and the increasing temperature of the outer surface of such a cigarette doesn't allow complete smoking of the portion of the smoking material. It reduces the smoking comfort and increases the losses of the smoking material in wasted cigarette stubs even when using cigarette holders or standard
25 sheets of perforated cigarette paper (envisaged by EP1378182).

In addition, many prepared tobacco products restrict the consumer in selection of the smoking material or force him or her to unnecessarily pay for the unused contents when such contents are thrown away.

Consumption of the combustion products of a smoking mixture by means of
30 tobacco pipes corresponds to the existing preferences and necessity. However, pipes are also rather expensive and are intended for repeated use and thus they require proper care.

The aforesaid problems are solved by utilization of cigarettes rolled by the smoker. However, these cigarettes have all the disadvantages of the filterless cigarettes. Besides, rolling of the cigarettes by the smoker is a rather time-consuming, laborious process requiring certain skills. Even though there are known
 5 mechanical devices (such as disclosed in EP1374705 or EP1397054) which (noticeably facilitate this process, they don't solve all the problems.

So called «Russian» cigarettes are used along with in addition to the abovementioned methods for the purpose of consumption of the unfiltered fumes or combustion products of smoking materials.

10 It is common knowledge that the «Russian» cigarette is one variety of tobacco product and comprises a casing incorporating a portion of the smoking material. The mouthpiece of the «Russian» cigarette includes an empty mouthpiece and an empty envelope. The mouthpiece is a pipe made of rather heavyweight mouthpiece paper. The envelope is a pipe made of cigarette paper. It is linked to the mouthpiece
 15 overlapping it along the full length or part of its length or by means of a connection element. The empty part of the envelope standing out of the borders of the mouthpiece and connected to the cavity of the mouthpiece, intended for the allocation of the smoking material, forms the smoking part of the casing of the «Russian» cigarette. It is possible to install a filter inside the mouthpiece. The fumes
 20 of the smoking material coming out of the smoking part pass through the cavity of the mouthpiece and are extracted by the smoker from that end of the mouthpiece, which is more distant from the portion of the smoking material.

The «Russian» cigarette has the following standard dimensions: diameter from 4 to 6mm, length from 70 to 105mm, including the length of the mouthpiece from 40
 25 to 70 mm, length of the smoking part is from 30 to 35mm.

«Russian» cigarettes offer the following obvious advantages as compared with the other of the methods and devices for the consumption of unfiltered smoke.

In the first place, this disposable product is cheap and maintenance-free.

In the second place, the standard «Russian» cigarette has a portion of the
 30 smoking material compatible to the same portion contained in the standard cigarette. It doesn't provoke increase of the consumption of the smoking material.

In the third place, the smoker extracts the fumes out of the end of the empty mouthpiece discontiguous to the smoking part. The significant length of the

mouthpiece favours the cooling of the smoke. Thus the mouthpiece itself gets heated only slightly. It increases the comfort of fume extraction by the smoker and allows smoking of the portion of the smoking material completely avoiding its wasted losses.

5 Tobacco and non-tobacco blends are used in the «Russian» cigarettes as a smoking material.

In spite of the available advantages, the industrial production of «Russian» cigarettes and application of their casings for the home-made cigarettes is restricted. It is caused by several significant deficiencies.

10 First of all, while making the «Russian» cigarettes it is difficult to prevent the particles of the smoking material from passing out of the smoking part into the cavity of the mouthpiece and consequently into the mouth of the smoker during smoking.

This is the reason why in extensive manufacturing, the smoking part of the mouthpiece of a «Russian» cigarette is filled with the smoking material pressed in the form of a compact rod. In addition, in order to prevent portions of the smoking material into the cavity of the mouthpiece, grooves with the teeth turned back into the cavity of the cigarette holder (for example cigarette manufacturer DE3518831) can be made on the inner wall of the mouthpiece of the «Russian» cigarette.

20 However, while filling, storing, transporting and using the «Russian» cigarettes, the pressed smoking material becomes loosened). Regardless of the presence of the aforesaid teeth, the particles of the smoking material escape from the smoking part into the cavity of the mouthpiece and later on into the mouth of the smoker during smoking.

25 It is problematic for a smoker to make a «Russian» cigarette using such a casing since the non-pressed smoking material gets spilled through the wide cavity of the mouthpiece.

30 Installation of a filter in the cavity of the mouthpiece of a «Russian» cigarette or application of the filtering mouthpiece (for example smokers' article EP1163857) almost excludes the possibility of getting of the particles of the smoking material into the cavity of the mouthpiece and into the mouth of the smoker during smoking. However, it is not acceptable for some of the above-mentioned categories of consumers.

Secondly, the envelope of a «Russian» cigarette is made of cigarette paper which is a soft, yielding material. Hence there exists the problem of the smoking part of the casing of the «Russian» cigarette being subject to deformation before the smoking material is placed in it. Deformation of the part of the envelope intended for placing the smoking material hampers the filling of the casing of a «Russian» cigarette with the smoking material reducing the comfort of the consumer.

Disclosure of the Invention

A first of object of the present invention is to provide a casing of a «Russian» cigarette or like smoking device, whose design impedes, without making significant changes in the composition of the smoke, the penetration of the particles of the smoking material located in the smoking part, into the cavity of the mouthpiece while filling the casing with this smoking material, and into the smoker's mouth during smoking. A second object of the present invention is to provide a casing of a «Russian» cigarette whose design impedes the deformation of the part of the envelope intended for the allocation of the smoking material before placing this smoking material.

A first object of the invention is the casing of a «Russian» cigarette having an empty mouthpiece and an empty envelope connected to it, at least a part of the cavity of which is intended for the allocation of the smoking material characterized in that it incorporates a separating partition which is selectively penetrable by the smoke and installed so that it is possible to separate at least a part of the cavity of the mouthpiece from at least a part of the cavity of the casing intended for the allocation of the smoking material as well as to overlap at least a part of the cross section of the cavity of the mouthpiece.

The pressed or non-pressed smoking material is located in the part of the cavity of the envelope of the offered casing of a «Russian» cigarette intended for it. By that the separating partition being selectively penetrable for the smoke and installed so that it is possible to detach at least a part of the cavity of the mouthpiece from at least a part of the cavity of the envelope intended for the allocation of the smoking material and so that it is possible to overlap at least a part of the cross section of the cavity of the mouthpiece impedes the penetration of the particles of the smoking material from the cavity of the envelope into the cavity of the mouthpieces.

While smoking a «Russian» cigarette, the separating partition being selectively penetrable by the smoke, ensures penetration of the smoke from the cavity of the envelope intended for receiving the smoking material into the cavity of the mouthpiece.

5 At the same time, the separating partition being selectively penetrable by the smoke, is installed so that it is possible to separate at least a part of the cavity of the mouthpiece from at least a part of the cavity of the envelope intended for the allocation of the smoking material as well as to overlap at least a part of the cross section of the cavity of the mouthpiece, and prevents the penetration of the particles
10 of the smoking materials from the cavity of the envelope intended for the allocation of the smoking material into the cavity of the mouthpiece and the mouth of the smoker.

Success of the first object of the invention is achieved by managing the generally known information about the physical and chemical composition of the fumes of the smoking materials, its physical and chemical properties and physical
15 and chemical properties of the materials used for the production of the casing of a «Russian» cigarette.

The separating partition being selectively penetrable for the smoke and the possibilities of its installation ensure the availability of the holes with the dimensions sufficient for the free passing of the gaseous medium of the smoke and particles
20 suspended in it from the cavity of the envelope intended for allocation of the smoking material into the cavity of the mouthpiece.

Of course, certain quantity of the smoke components is being sorbed by the partition as a result of the natural processes of the Brownian motion, sedimentation, coagulation, capillary condensation, etc. However, absence of said filter, made of the
25 material having high sorption properties, special reagents and devices for neutralization of fume's components, ensure minor changes of the composition of the fume of the smoking material.

Absence of the filter manufactured out of the material having high sorption capability and without application of the reagents increasing this capability, ensures
30 insignificant sorbing of the smoke components by the separating partition.

The separating partition being selectively penetrable by the smoke, prevents the particles of the smoking material from migrating from the cavity of the envelope into the cavity of the mouthpiece.

As a result of the natural processes, the internal surface of the empty mouthpiece also sorbs some amount of the smoke components. The mouthpieces, made of the material the sorption capability of which is not so high, without application of the reagents increasing this capability ensures availability of the smoke with insignificantly changed composition and consequently taste and flavour by the consumer.

The above separating partition being selectively penetrable by the smoke, can be made in the form of a deformed part of the wall of the empty mouthpiece. Thus the selective penetrability of the separating partition for the smoke is ensured by the availability of the clearance of the relevant size between the deformed and non-deformed parts of the wall of the empty cigarette holder. In addition to it, or alternatively, the selective penetrability of such partition by the smoke, can be ensured by making of the perforations of the relevant size in the deformed part of the wall of the empty mouthpiece.

As an alternative, the separating partition selectively penetrable by the smoke, can be made in the form of perforated diaphragm installed in the cavity of the mouthpiece or in the cavity of the envelope of the casing of a «Russian» cigarette. The selective penetrability of such separating partition by the smoke is ensured by the perforations of suitable size.

Alternatively, the separating partition being selectively penetrable by the smoke can be made in the form of a spiral insert installed in the cavity of the mouthpiece or in the cavity of the envelope of the casing of a «Russian» cigarette. In this case the selective penetrability of the separating partition by the smoke is ensured by the clearance of the corresponding size between the convolutions.

The connection of the empty mouthpiece with the empty envelope in the casing of a «Russian» cigarette can be ensured by different means. For example, by complete or partial overlapping of the mouthpiece by the envelope or their butted joint by means of the connection element.

Besides, it is expedient to install a spacing insert in the casing of a «Russian» cigarette in the part of the cavity of the envelope intended for the allocation of the smoking material. It will impede the deformation of this part of the envelope. This spacing insert is extracted before the allocation of the smoking material in the casing of a «Russian» cigarette.

For the purpose of increasing the stability of the composition of the smoke in the casing of a «Russian» cigarette suggested in the first object of invention it is advisable to manufacture the separating partition being selectively penetrable for the smoke and/or the mouthpiece of the material having low sorption capability.

5 The second object of the present invention is a casing of a «Russian» cigarette having an empty mouthpiece and an empty envelope connected to it. This casing is characterized in that the length of the mouthpiece is at least equal to the length of the envelope, the envelope overlaps the mouthpiece with all its length, the mouthpiece and the envelope are installed so that it is possible to move them
10 relatively to each other along the common longitudinal axis.

 The length of the mouth piece is not less than the length of the envelope, and the mouthpiece is overlapped by all the length of the envelope and is used as a spacing insert impeding the deformation of the envelope including that part of it which forms the cavity intended for the allocation of the smoking material. Installation of the
15 mouthpiece and the envelope and providing the possibility of their mutual displacement along the common longitudinal axis makes it possible to form the cavity of the envelope as a result of this displacement. The aforesaid cavity is intended for the allocation of the smoking material.

 For the production of a «Russian» cigarette, the empty mouthpiece and the
20 empty envelope are displaceable relatively to each other along the common longitudinal axis. As a result, the envelope forms the cavity intended for the allocation of the smoking material. In this cavity the smoking material is located and the resultant «Russian» cigarette may then be smoked.

 The success of the second object of invention is achieved by management of
25 the well-known information about the physical properties of the materials used in the production of the casing of the so called «Russian» cigarettes.

 The connection of the mouthpiece with the envelope is achieved by overlapping the mouthpiece by the envelope. The mouthpiece having length at least equaling to the length of the envelope, is overlapped by all the length of the
30 envelope. The mouthpiece made of stiff mouthpiece paper resists the deformation of the envelope made of softer and more yielding cigarette paper. The mouthpiece and the envelope are installed so that it is possible to displace them relatively to each

other along the common longitudinal axis, leading to the formation of the cavity of the envelope intended for the allocation of the smoking material.

The casing of a «Russian» cigarette or like smoking device in the second object of the invention may contain a separating partition being selectively penetrable
5 by the smoke, installed so that it is possible to separate at least a part of the cavity of the mouthpiece from at least a part of the cavity of the envelope and so that it is possible to overlap at least a part of the cross section of the cavity of the mouthpiece.

The separating partition being selectively penetrable by the smoke may be made in the form of a deformed part of the wall of the mouthpiece. Besides, or
10 alternatively, the selective penetrability of such a partition for the smoke can be ensured by the perforations of suitable size.

Alternatively, the separating partition being selectively penetrable by the smoke can be made in the form of a perforated diaphragm installed in the cavity of the mouthpiece or butt to it against the face of the mouthpiece.

15 As an option, the separating partition being selectively penetrable by the smoke can be made in the form of a spiral insert installed in the cavity of the mouthpiece or butt to it against the face of the mouthpiece.

For the purpose of increase of the stability of the composition of the smoke in the casing of a «Russian» cigarette as in the second object of the invention it is
20 advantageous to make a separating partition being selectively penetrable by the smoke and/or mouthpiece of the material having low sorption capability.

Alternatively, the casing of a «Russian» cigarette as in the second object of invention may incorporate any filter.

It is clear for those skilled in the art that any other additions and/or more
25 accurate definitions of the inventive design are possible within the limits restricted by the subject of invention.

Brief Description of the Drawings

Further, the features of the invention are explained, by way of example, in the
30 detailed description of the design and practical application of the casing of a «Russian» cigarettes with reference to the accompanying schematic drawings in which:-

Fig. 1 – is a schematic cross section through the casing of a «Russian» cigarette or like smoking device according to the invention in which the separating partition is selectively penetrable by the smoke and is made in the form of a deformed part of the wall of the empty mouthpiece, lengthwise section;

5 Fig. 2 – is a section on the line A-A of Fig. 1;

Fig. 3 - is a section on the line B-B of Fig. 1;

Fig. 4 – is a section on the line A-A of Fig. 1 but wherein the deformed part of the wall of the empty mouthpiece is perforated;

10 Fig. 5 – is a longitudinal section through a casing forming an alternative embodiment of casing in which a separating partition is provided selectively penetrable by the smoke and in the form of a perforated diaphragm;

Fig. 6 –is a section on the line C-C of Fig. 5;

15 Fig. 7 - is a longitudinal section through a casing forming an alternative embodiment of the invention in which the separating partition is provided selectively penetrable by the smoke and in the form of spiral insert;

Fig. 8 –is a section on the line D-D of Fig. 7;

20 Fig. 9 –is a longitudinal section through a casing forming a further embodiment of the casing according to the invention in which an empty mouthpiece is connected to an empty envelope by means of the partial overlapping of the mouthpiece by the casing;

Fig. 10 – is a longitudinal section through a casing forming an alternative embodiment of the invention, in which an empty mouthpiece is butt connected with an empty envelope by means of a connection element;

25 Fig. 11 – is a longitudinal section through a still further embodiment of the invention with a spacing insert provided in the cavity of the envelope; Fig. 12 – is a longitudinal section of a still further embodiment in which the length of an empty mouthpiece is not less than the length of an empty envelope, the envelope overlapping the mouthpiece by all the length, a part of the wall of the mouthpiece being deformed;

30 Fig. 13 – is a longitudinal section of a yet further embodiment in which the length of an empty mouthpiece is not less than the length of an empty envelope, the envelope overlapping the mouthpiece by all length; in the mouthpiece there is a

separating partition for the smoke being selectively penetrable and made in the form of a perforated diaphragm; and

Fig. 14 – is a longitudinal section of a casing forming a still further embodiment of the invention in which the length of the empty mouthpiece is not less than the
 5 length of the empty envelope, the envelope overlaps the mouthpiece by its all length, in the mouthpiece there is a separating partition being selectively penetrable for the smoke made in the form of a spiral insert, lengthwise section.

Best Mode Carrying Out the Invention

10 Generally speaking, the casing of a «Russian» cigarette comprises an empty mouthpiece 1 and an empty envelope 2. Mouthpiece 1 is the support part of the casing.

Cavity 3 of the mouthpiece 1 is a channel for the passage of smoke during smoking. Cavity 4 of the envelope 2 is linked to the cavity 3 of the mouthpiece 1 and
 15 is intended for the allocation of the selected smoking material.

A separating partition which is selectively penetrable by the smoke from the direction of the cavity 4 of the envelope 2 (Fig. 1, 2, 3, 4) and in the embodiment is provided by a deformed part 5 of the wall of the mouthpiece 1. There is a clearance
 20 6 between the deformed part 5 of the wall of the mouthpiece 1 and non-deformed part of the wall of the mouthpiece 1, the size of which is sufficient for letting the smoke flow from the cavity 4 of the envelope 2 into the cavity 3 of the mouthpiece 1 during smoking. The deformed part 5 of the wall of the mouthpiece 1 may be perforated (Fig. 4), with the size of the perforations 7 being sufficient for the passage of smoke..

25 The separating partition being selectively penetratable by smoking alternatively, be made in the form of a perforated diaphragm 8 installed in the cavity 3 of the mouthpiece 1 (Fig. 5, 6). The separating partition being selectively penetrative by the smoke, may, alternatively, be made in the form of a spiral insert 9 installed in the cavity 3 of the mouthpiece 1 (Fig. 7, 8). The spiral insert 9 has a clearance
 30 size of which is sufficient for letting the smoke in.

It is advantageous to manufacture the empty mouthpiece 1, perforated diaphragm 8 and spiral insert 9 of the same material using rather stiff mouthpiece paper. Such a material practically doesn't sorb the substances from the gaseous

medium of the smoke and particles suspended in it. As a consequence, the above elements of the casing of the «Russian» cigarette made of the mouthpiece paper have almost no effect on the composition of the smoke of the smoking material.

In any of the described embodiments of the casing of a «Russian» cigarette according to the invention, the connection of the empty mouthpiece 1 with the empty envelope 2 is ensured by the location of the empty mouthpiece 1 in the cavity of the envelope 2 with complete overlapping of the mouthpiece 1 by the envelope 2. Other possibilities for the aforesaid connection are envisaged. Thus, it is possible to connect the empty mouthpiece 1 with the empty envelope 2 by means of the envelope 2 partially overlapping of the mouthpiece 1 as shown in Fig. 9. In this case the empty envelope 2 tightly covers the empty mouthpiece 1 along its length partially. Butt connection of the empty mouthpiece 1 with the empty envelope 2 is also possible such as by means of the connection element 11 (Fig. 10). In such a casing of «Russian» cigarettes according to the invention, the length of the cavity 4 of the empty envelope 2, intended for filling with the smoking material, are specified by the manufacturer beforehand.

A spacing insert 12 (Fig. 11) for resisting the deformation of the cavity 4 of the envelope 2 during storage and transportation of the casing before the location of the smoking material may be installed in any of the aforesaid embodiments in the cavity 4 of the envelope 2 intended for filling with the smoking material.

In the first object of the invention, the casing of a «Russian» cigarette according to the invention having an empty mouthpiece 1 and the empty envelope 2, the length of the mouthpiece 1 at least equals to the length of the envelope 2 (Fig. 12). Empty mouthpiece 1 and empty envelope 2 are combined so that it is possible to move them relative to each other along the common longitudinal axis. The empty mouthpiece 1 may have a separating partition being selectively penetrable by the smoke, made in the form of the deformed part 5 of its wall (Fig. 12) which may be perforated (Fig. 4). The separating partition being selectively penetrative for the smoke, can be made in the form of the perforated diaphragm 8 (Fig. 13) or in the form of the spiral insert 9 (Fig. 14).

The method of use of such a casing of a «Russian» cigarette according to the invention is as follows. Before filling with the smoking material, a smoker moves the mouthpiece 1 and envelope 2 relative to each other along the common longitudinal

axis forming the cavity 4 of the envelope 2 intended for the allocation of the smoking material. The extent of the above travel can vary.

Such a design of the mouthpiece 1 ensures protection of the empty envelope 2 against deformation and damage during storage and transportation and prior to filling with smoking material and without application of any other additional elements. Besides, it allows independent adjustment of the size of the cavity 4 of the envelope 2 and consequently adjustment of the amount of the smoking material located by means of moving the empty mouthpiece 1 and empty envelope 2.

Empty mouthpieces 1 are made by means of rolling appropriate sheet materials around the geometrical axis and overlapping such . The deformed part 5 of the wall of the mouthpiece 1 is formed individually on each mouthpiece 1. The perforations are made on the specified section before the rolling of the mouthpiece 1. The envelopes 2 are woundup on the mouthpieces 1 or manufactured separately and connected with the mouthpiece 1 by means of the connection element 11. The perforated diaphragms 8 are made by means of stamping either as a whole with the mouthpiece 1 before the rolling of the mouthpiece 1 or separately and are located in the cavity 3 of the mouthpiece 1 or in the cavity 4 of the envelope 2 butt against the mouthpiece 1. The spiral inserts 9 are made by means of winding and cutting of the roll of the heavyweight paper or cardboard also as separate parts and then are located in the cavity 3 of the mouthpiece 1 or in the cavity 4 of the envelope 2 butt against the mouthpiece 1. The spacing inserts 12 are made by means of rolling the sheets of the heavyweight mouthpiece paper and are matched with the mouthpieces 1 before the winding of the envelopes 2.

Subsequently, the above casings of «Russian» cigarettes are assembled in complete sets, packed and transferred to a trading network.

Smokers fill the described casings of the «Russian» cigarettes with the selected of prescribed smoking material and use ready cigarettes as intended in the generally accepted way.

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Industrial Applicability

The offered casing of a «Russian» cigarette in any of the embodiments of the invention can be easily manufactured industrially. The «Russian» cigarettes manufactured by applying of the offered casing provide the smokers with the

convenience in use, hygiene and comfort of smoking making it possible to preserve, almost completely, the desired taste and flavour of the tobacco smoke or medicinal factors of the smoke obtained from the smoking mixtures of the medical prescription.